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It was hypothesized that when no standard of "good teaching" is set for the self-evaluation of teaching performance, behavior changes and patterns of information selection would be determined by the teacher's satisfaction with his performance (the smaller the satisfaction, the fewer self-evaluating changes take place and the less teaching-related information is noticed). Each of 38 teacher interns, the subjects of this study, taught a 50-minute video-taped lesson for which no instructions on teaching standards had been provided. Immediately after the teaching session and again after viewing the tape of his performance, each student completed an attitude questionnaire consisting of eight concepts (categorized in two domains relating to the teaching situation, and two domains referring to the teacher's self-image) each rated on nine 7-point scales and had an interview to determine performance perception and satisfaction. On the basis of data collected before self-viewing, the video-taped performance record students were divided into low and high satisfaction groups and compared to determine if significant changes in concept ratings after self-viewing were due to predisposed satisfaction or dissatisfaction with the teaching performance. Results showed that when no model of "good teaching" is presented, reactions to self-viewing of teaching performance are determined largely by the viewer's predispositions. (A 15-item reference list is included.) (SM)

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PRE- AND POSTTEST REACTIONS TO SELF-VIEWING ONE'S TEACHING PERFORMANCE ON VIDEOTAPE[1]

Gavriel Salomon[2] and Frederick J. McDonald[3]

Studies of the effects of self-viewing on videotape or film tend to show contradictory results. Numerous studies done at the Stanford Center for Research and Development in Teaching (McDonald & Allen, 1967) and in the Air Force (Eachus, 1965) have shown consistent behavioral changes in teachers and in officers resulting from training procedures employing self-viewing on videotape. Similar results are reported by Walz & Johnston (1963), who studied the effects of self-viewing on the self-perception of counseling candidates. They reported that after self-viewing, counselors accepted others' judgments of their professional skills more readily and became less positive in their own self-evaluation. Stroller (1967), who worked with schizophrenics, reported that after a period of attending to aspects of physical appearance, subjects began to notice their own undesirable behaviors and tried to change them.

Similar results were obtained when other methods of providing information to a person about his own behavior were employed. For example, Gage, Runkel, and Chatterjee (1960) tried to change the classroom behavior of teachers by providing them with negative information about their behavior from their students. The results showed that behavior changed in the direction implied in the negative messages. Since verbal coaching or reinforce-

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[1]An earlier version of this paper was presented at the meeting of the American Psychological Association, San Francisco, September 1968.

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ment were not given to the teachers, the observed changes could be clearly ascribed to the message.

On the other hand, Wolff (1943) and later Nielsen (1962) reported extreme emotionality, rejection,and evasion of the information received during self-viewing. According to Nielsen, "An individual's awareness of his own behavior in a situation usually is distorted by self-interest and personal involvement. In the self-confrontation condition, a record of the reality of one's performance contradicts erroneous perceptions and may be painful" (1962, p. 28).

The latter observations are very much in line with various studies in communication. Such studies have shown that people prefer to expose themselves to positive rather than negative information about themselves (e.g., Cartwright, 1949); become hostile toward the source of information (Leavitt & Mueller, 1951); evade the message (Cooper & Jahoda, 1947); or try to discontinue the process of communication (Thibaut & Coules, 1952).

It is assumed that self-viewing on a TV screen is potentially threatening. However, in the first few studies cited above (e.g., Walz & Johnston, 1963) this supposed aversive character of self-viewing did not impede behavior change. On the contrary, self-viewing enhanced changes in the direction implied in the message. The problem is: When do people accept and when do they reject negative, unsupportive information about themselves when faced with a reliable recording of their behavior?

It will be noted that in all the studies in which people (mainly professionals) were found to change their behavior as a result of receiving new and partly negative information about themselves, two conditions were met. These conditions were not present in any of the studies where rejection, defensiveness, etc. were reported. The two conditions seem to be: (a) that

the receiver of the information knows what behaviors are expected of him and therefore looks for deviations of his behavior from that expected, and (b) that the receiver has adopted these exceptions for the desirable behavior and is ready to modify his behavior to make it congruent with the expectations. When both conditions are met, as is the case in the studies by Walz & Johnston (1963), McDonald & Allen (1967), and Gage et al. (1960), the information provided serves as feedback for the receiver. That is, the information which is selected by the receiver "tells" him how far his behavior deviates from the desirable and accepted standards. Attention is therefore directed to cues contained in the message. Moreover, defensive reactions are not likely to take place.

However, when no standard is set or accepted, other variables determine one's reaction to self-viewing. Response to the information in the message (videotape, report) is determined by the viewer's self-perception and predispositions to accept certain categories of information. For instance, Wyley (1961) and later Steiner & Rogers (1963) pointed out that the main motivation in selecting new information about one's self is not to maintain cognitive balance but rather to increase, or at least preserve, self-esteem. Hence, one would expect the reactions of self-viewers to their own recorded image to be influenced by their self-attitudes, satisfaction with their own performance, and other personal predispositions (e.g., anxiety). In particular, defensive reactions, for example, the amount of projection should correlate with the amount of threat the viewer experiences.

The study reported here was a first attempt to observe teachers' information-selection and attitudinal changes when faced for the first time with their own recorded teaching performances on videotape. Since numerous studies have described and analyzed teachers' reactions when the desired teaching behavior is known and accepted, this study observed changes when these condi-

tions were not met. No standards were set, no model of "good teaching behavior" was presented, and no guidance was given as to what should be attended to during self-viewing. It was expected that under such conditions attitudinal changes and patterns of information selection would be determined to a large extent by the teachers' satisfaction with their own performance. More specifically, it was hypothesized that under these conditions: (a) Attitudinal changes which take place after self-viewing are related to the degree of one's expressed satisfaction with his own performance. The smaller the reported satisfaction, the more defensive (e.g., projective) responses occur; the larger the reported satisfaction, the more self-elevating changes take place. (b) Self-reported satisfaction with one's own performance will also relate to patterns of information selection. The smaller the reported satisfaction, the less teaching-related information is noticed, and the more negative will be the evaluation of the observed performance.

METHOD

Subjects and Procedures

Thirty-eight teaching interns in a California state college participated in the study as part of their training. Each intern was asked to teach a standard 50-minute lesson to a fifth- or sixth-grade class of 25 students. No instructions as to how to teach the lesson were given. Each intern had 24 hours to prepare the lesson. The lesson itself was videotape-recorded with the permission of the interns.

At the end of the lesson the intern was given an attitude questionnaire and was interviewed. The intern returned on the following day and viewed a 20-minute selection of the videorecording of his teaching. Only the TV operator was present in the room during self-viewing; no comments as to the quality of the lesson or the achievement of the students were made. At the end of

the 20-minute self-viewing period the intern again completed the attitude questionnaire and was interviewed a second time. The first and second questionnaires were identical in content except for the order of pages. The two interviews were dissimilar.

Measurement Instruments

The attitude questionnaire contained eight concepts, each of which was to be rated on nine seven-point scales (e.g., good-bad, strong-weak, hard-soft, etc.). The position of the positive and negative ends of each scale was randomized. The eight concepts were chosen to represent four domains. Two of these could be used for defensive reactions since they were unrelated to the intern's 'self' but rather to the teaching situation; one domain referred to the viewer's 'self' but was irrelevant to the situation; and the last referred to the 'self' of the intern as a teacher. The four domains are given below in the order cited above.

Domain	Concept
Institutional domain	"Teacher education"
Professional domain	"Use of electronic devices in classroom"
	"Camera in classroom"
Self-nonprofessional domain	"Me as student"
	"Me as friend"
Professional-self domain	"My appearance in classroom"
	"Me as seen by students"

The scales were scored from one (most negative) to seven (most positive). The score for each subject's rating of one concept was computed by adding the nine scale scores. Thus, the score of one individual on one concept could range from 9 to 63.

The Interviews

The first interview, which occurred before self-viewing, was conducted by four interviewers who were randomly assigned to interns. The interviewer inquired about the intern's perception of his performance and his satisfaction with it. He was asked to describe his objectives, difficulties, things he felt needed change, source of difficulties, and his over-all evaluation of his performance. The interviews were recorded on tape recorders and later transcribed. Analysis of the interview material was made by counting all positive and negative evaluative statements made by each subject. The satisfaction score for each intern was the ratio of negative evaluative statements to the total number of evaluative statements. The analysis of the interviews was done by two independent raters. Interrater agreement was .93.

The second interview was conducted, after the self-viewing, by the same four interviewers randomly reassigned to the interns. The interview dealt with the intern's evaluation of what he saw on the screen, what he attended to on the screen, and the kind of information which was new to him. The analysis of the obtained responses was carried out along two lines: (a) what the intern reported noticing on the screen; (b) his evaluation (positive or negative) of what he noticed. The reported observations were grouped into two main categories: (a) teaching behavior (presentation of material, use of teaching techniques, rapport with students, etc.); (b) physical appearance and parts of body noticed, body movements, facial expressions, mannerisms, speech patterns, etc. Six raters were trained to analyze and categorize the material of the second interview. Interrater agreement was .89.

RESULTS

Changes in Attitude Ratings

The eight concepts received different ratings by the interns before self-viewing ($F = 6.72$, $p < .001$) and after self-viewing ($F = 7.39$, $p < .001$).

The results are presented in Table 1.

TABLE 1

Summary of Analyses of Variance for Concept Ratings Before and After Self-Viewing

Source	df	SS	MS	F
Before self-viewing:				
Subjects	37	4859.1	131.3	2.46*
Concepts	7	2481.3	354.5	6.72**
Error	259	13657.7	52.7	
After self-viewing:				
Subjects	37	6641.4	179.5	3.86**
Concepts	7	2400.5	342.9	7.39**
Error	259	12017.5	46.4	

*p< .05

**p< .01

However, certain concepts received different ratings as a result of self-viewing on videotape (Table 2). The concept, "Teacher education," received a significantly lower rating after self-viewing ($F = 5.98$, $p < .05$) while the concept "My appearance in classroom" received a significantly higher rating ($F = 4.38$, $p < .05$). Other concepts in the same domain (Professional-self) also received higher ratings, narrowly missing the .05 level of significance ($F = 3.50$ and $F = 3.76$, respectively).

TABLE 2

Summary of Analyses of Variance for

Eight Concepts:

Comparison of Ratings Before and After Self-Viewing

Concept	Mean rating before self-viewing	Mean rating after self-viewing	SS	F
Teacher education	48.18	43.23	389.26	5.98*
Use of electronic devices	43.23	43.10	.03	.012
Camera in classroom	41.13	40.39	10.31	.85
Me as student	46.95	48.34	36.96	1.78
Me as friend	49.66	49.81	.47	.001
Me as teacher	43.10	46.21	183.21	3.50
My appearance in classroom	43.37	45.74	106.58	4.38*
Me as seen by my students	42.60	44.29	53.89	3.76

*p <.05

Scheffe's paired-comparison tests were employed to study the patterns of concept clustering both before and after self-viewing. Before self-viewing (Table 3) ratings of concepts could be grouped into two significantly different clusters: Institutional and Self-nonprofessional on the one hand, and Professional-self and Professional on the other. The former concepts received significantly higher ratings than the latter.

TABLE 3

Paired Comparison Between

Concept Ratings Before Self-Viewing (Scheffe's Method)

	1	2	3	4	5	6	7
1. Teacher education							
2. Use of electronics	4.95*						
3. Camera in classroom	7.05*	2.10					
4. Me as student	1.23	3.71*	5.82*				
5. Me as friend	1.48	6.42*	8.53*	2.71			
6. Me as teacher	5.08*	.13	1.97	3.85	6.56*		
7. My appearance in class	4.81*	-.14	2.24	3.58	6.29*	.27	
8. Me as seen by pupils	5.58*	.63	1.47	4.35	7.06*	.50	.77

*p <.05

Confidence Interval, $\hat{L}$ = ±3.35

After self-viewing there was a significant change in the patterning of the ratings (Table 4).

TABLE 4

Paired Comparison Between

Concept Ratings After Self-Viewing (Scheffe's Method)

	1	2	3	4	5	6	7
1. Teacher education							
2. Use of electronics	.56						
3. Camera in classroom	3.26	2.70					
4. Me as student	4.68	5.24	7.94*				
5. Me as friend	6.15*	6.70*	9.41*	1.47			
6. Me as teacher	2.55	3.11	5.61	2.13	3.60		
7. My appearance in classroom	2.08	2.64	5.34	2.60	4.07	.47	
8. Me as seen by my pupils	.63	1.19	3.89	4.05	5.52	1.92	1.55

*p <.05

Confidence Interval, $\hat{L}$ = ± 5.28

Each of these two clusters was now subdivided, yielding four significantly different clusters which corresponded to the four domains. The first cluster was divided into the Institutional concept ("Teacher education") whose rating dropped significantly, and the Self-nonprofessional ("Me as friend;" "Me as student") concepts whose rating did not change. The second cluster, similarly, was divided into the Professional-self concepts ("Me as teacher," etc.) which received higher ratings, and the two Professional ("Camera in classroom," etc.) concepts.

In view of the significant individual differences in concept-rating obtained both before and after self-viewing, further analyses were made following a division of the interns into high- and low-satisfaction groups. This division was made on the basis of responses in the first interview. High-satisfaction interns were those who had proportionally more positive evaluative statements about their performance while the low-satisfaction ones had proportionally more negative statements (the division was made at the median of the proportion of negative evaluational statements to the total number of evaluative statements).

Two equal-size groups were formed (N = 19). Differences in concept rating before and after self-viewing were computed for both groups. Only those concepts whose ratings changed from one time to another were analyzed. A *t* test was used to test significance of changes in rating from pre- to post-self-viewing for each group (Table 5).

TABLE 5

Comparison of Mean Ratings of Two Clusters of Concepts

Before and After Self-Viewing of Low- and High-Satisfaction Subjects

	Teacher education			Professional-self		
	Before Self-Viewing	After Self-Viewing	t	Before Self-Viewing	After Self-Viewing	t
High-satisfaction	46.16	43.60	.338	35.56	42.00	6.34**
Low-satisfaction	49.27	45.77	2.12*	23.77	29.55	.53

*p <.05

**p <.01

Low-satisfaction interns devaluated the Institutional concept significantly after self-viewing (t = 2.12, $p < .05$), while the high-satisfaction ones did not change their evaluation to any significant extent (t = .338). But the high-satisfaction interns increased their evaluation of the Professional-self concepts significantly (t = 6.34, $p < .01$), compared with the low-satisfaction interns who did not change their evaluation (t = .532). Thus, it is apparent that the low-satisfaction interns were the major contributors to the downward change in ratings of the Institutional concept. The high-satisfaction interns were the major contributors to the upward change in ratings of the Professional-self concepts.

Differences in information-selection

Some of the questions in the post-self-viewing interview elicited information on what the interns observed on the screen. Congruent with others'

reports (e.g., Stroller, 1967) the majority of reported observations were categorized as "physical appearance." The median percent of "physical appearance" observations was 57.8 (range: 22-83%). One the other hand the media percent of reported "teaching behavior" observations was 17.9 (range: 1-59%). Similarly, the majority of evaluative statements of what had been observed on the screen were negative (mean frequency 8.26, S. D. 4.8) while the mean frequency of positively evaluated observations was only 3.23 (S. D. 2.11). However, the division of the interns into low- and high-satisfaction groups revealed an interaction between degree of satisfaction and kind of observation reported, and between satisfaction and negativeness of evaluation.

For purposes of comparing the groups with respect to these variables the ten interns with the highest satisfaction scores and the ten interns with the lowest satisfaction scores were chosen. The Rank-Sum test (Dixon & Massey, 1957) was performed. Table 6 presents the T values. Since n = 10 in each group, normal approximations were done.

TABLE 6

Rank Sum Differences Between
the Ten Highest- and Ten Lowest-Satisfaction Subjects
for Kind of Observation Made and
Negative Evaluation of Observations

	Teaching Behavior Observations	Physical Observations	Negatively Evaluated Observations
High satisfaction	109.5	87.00	81.5
Low satisfaction	100.5	123.00	128.5
Z	2.03*	4.42**	5.50**

*p <.05
**p <.01

High-satisfaction interns reported significantly more teaching-behavior observations (Z = 2.03, $p < .05$) but significantly fewer physical appearance observations (Z = 4.42, $p < .01$) than the low-satisfaction interns. They also made fewer negative self-evaluative statements (Z = 5.50, $p < .01$).

DISCUSSION

The hypotheses of the experiment were supported. Self-viewing was followed by attitudinal changes which were clearly related to the subjects' predispositions. In spite of the fact that most self-observations were negatively evaluated by the viewers, no downward changes in self-evaluation of the interns as teachers took place. Thus it can be concluded that when no model of "good teaching" is presented, no guidance is given, and no new and common standards are adopted, reactions to self-viewing of one's teaching performance on videotape are determined largely by the viewer's predispositions. That is, his satisfaction with his own performance determines what will be noticed on the screen, how it will be evaluated, and to what attitudinal change it will lead.

These findings are in sharp contrast with those obtained in the Stanford teacher education program (McDonald & Allen, 1967) and by Walz & Johnston (1963) with counseling trainees. However, as will be recalled, in those studies the subjects were usually given a model to adopt and with which to compare their behavior. The findings reported here are in line with those reported in the communication and the self-viewing studies carried out by Wolff (1943), Nielsen (1962), and Stroller (1967).

It should be further noted that this study did not employ a control group which received guidance in self-viewing. Hence, the results can only be indirectly compared with other studies where the presumed conditions,

presentation of a new standard of behavior and its adoption, were met. Given this limitation, it nevertheless seems reasonable to conclude that self-viewing on videotape will not lead to any desirable attitudinal and behavioral changes unless it serves as <u>feedback</u>, i.e., information about the amount of departure from desired performance (Tustin, 1966). That is to say, one could expect particular desirable changes to take place after self-viewing only if the received message tells the viewer the amount of his departure from a desired standard which has been accepted as a standard by the viewer. Since in this study no such standards were given, the information on the TV screen provided during self-viewing could not be regarded as feedback. At most, it told the viewer how much he departed from his own expectations. Since his own expectations were apparently a function of his satisfaction with his own performance, his reactions to self-viewing appeared to be determined by this factor.

Whether the subject's satisfaction with his performance reflected his general disposition or a simple situational phenomenon is a question that cannot be answered by the data gathered in this study. The first interviews did provide some hints that degree of satisfaction was connected with a more general disposition. The low-satisfaction subjects tended to express feelings of being manipulated by external sources over which they did not feel they had control. These subjects claimed that the lesson to be taught was imposed on them, the students misdirected, and the TV operators disturbing. It may be that these teachers, in contrast to the high-satisfaction ones, felt that the locus of control was external and that they were not autonomous modifiers of their environment. Hence their tendency to evaluate "Teacher education" negatively and to disregard teaching-related information while self-viewing. This behavior is consistent with Lefcourt's findings (1966) that those who

do not perceive themselves as having control over a situation are unlikely to discriminate, recall, and evaluate much decision-relevant information.

If this speculation about the "locus of control" variable is supported by empirical evidence, it would imply a differential use of videotape for self-viewing as a part of professional training. In the interest of maximizing training outcomes, trainees with "external locus of control" might receive different training procedures than would those with "internal locus of control."

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